

KMUPA, J.

Studies on the physiology of germination of spores of *Funaria hygrometrica* (Sibth.) Acta soc botan Pol 33 no.1:179-192 '64

1. Department of Plant Physiology, Higher Pedagogical School, Krakow.

L 34913-66

ACC NR: AP6026595

SOURCE CODE: CZ/0034/66/000/002/0127/0128

AUTHOR: Krupa, Juraj (Engineer)

ORG: VUHP, Bratislava

TITLE: Calcium chloride as the best chemical agent for insuring smooth supply of powdered substances during winter

SOURCE: Hutnicke listy, no. 2, 1966, 127-128

TOPIC TAGS: steel industry, iron, calcium chloride

ABSTRACT: For ores with a water content of 4-5% 1 to 2 kg of CaCl_2 are required per ton of ore for temperatures up to -15°C ; below this level 2 to 5 kg are needed. The chloride is added in the form of an anhydrous powder. Experience obtained in shipping iron ore with this additive in Poland, Yugoslavia and Rumania is described. It is important to prevent contact between the chloride and snow. Experience in Czechoslovakia during the winter of 1964/65 was very favorable. Orig. art. has: 1 table. [JPRS: 34,779]

SUB CODE: 11, C7, 05 / SUBM DATE: none

Card 1/1

KRUPA, J.; UHER, J.; Technická spolupráce: UTRATA, I.

The source of fat and the problem of the amount of fat necessary
for fat embolism. Bratisl. lek. listy 44 no.6:337-352 30 S '64.

1. Vyzkumny ustav traumatologiccky v Brne, (reditel prof.
MUDr. V. Novak).

KRUPA, Josef

Sporadic cretinism in a 3-year-old girl. Cesk.psychiat. 55 no.6:
397-402 D '59.

1. Detske odd. psychiatricke lecebny v Kromerizi.
(CRETINISM case reports)

KRUHA, Juraj, inz.

Hydrophobic materials and their use by the Czechoslovak Rail-
roads. Zel dop tech 12 no.2:32-39 '64

KRUPA, Juraj, inz.

How to ensure the continuous unloading of loose materials
during winter. Zel dop tech 11 no.9:254-255 '63.

KRUPA, L.

"Węgliarki wąskoprzodkowe" (Small-face cutters), by L. Krupa. Reported in
New Books (Nowe Książki), No. 12, June 15, 1956.

KRUPA, Lucjan, dr inz.

Influence of the tool feed and machining rate on the power
of the engine of a longwall chain cutter. Przegl mech 23
no. 5:151 10 Mr '64.

KOLENDOWSKI, Jerzy, dr inz.; KRUPA, Lucjan, mgr inz.

Automation of coal cutters. Przegl gorn 19 no.1:25-35 Ja '63.

~~XXXXXXXXXXXXXXXXXXXX~~
Poland/Chemical Technology - Chemical Products and Their Application. Treatment of
Natural Gases and Petroleum. Motor Fuels. Lubricants,
I-13

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62588

Author: Krupa, Marian; Masiarczyk, Helena; Palczewski, Jan

Institution: None

Title: Desulfurization of Petroleum Products Obtained from High Sulfur
Content Petroleum

Original

Periodical: Odsiarczanie produktow naftowych otrzymywanych z rop Wysokosiarkowych,
Nafta (Polska), 1956, 12, No 3, 72-76; Polish

Abstract: Considered are the presently practiced in Poland procedures for
desulfurization of petroleum products obtained from high sulfur
content petroleum and also procedures recommended for adoption in
practice: catalytic desulfurization of gasoline with the use of
decolorizing clays or bauxite, extraction of mercaptanes with soda
solution in the presence of methanol, etc.

Card 1/1

TRUPA, S.

The 2d Congress is approaching. p. 1.

Indissoluble friendship. p. 1

Vol 8, no. 51. Dec. 1955. ROLNIK SPOLNOZIELCA. Warsaw, Poland

(k). We share our experiences. p. 2

So: Eastern European Accession. Vol 5, no. 4, April 1956

KRUPA, S.

KRUPA, S. All should participate in the pre-Congress competition. p. 1.
Vol. 9, no. 5, Jan. 1956. ROLNIK SPOLDZIFICA. Warszawa, Poland.

SOURCE: East European Accessions List (FEAL) Vol. 6, No. 4--April 1957

KRUPA, Tadeusz

The Conference of the Workman's Self government of the Chedziez Works
decreed to modernize the plants. Przem mat budow 9 no.17:3 30 Ap '62.

1-13217-66
Acc No AP6006105

SOURCE CODE: CZ/0053/65/011/004/0322/0322

AUTHOR: Zathurecky, L.; Krupa, V.; Rochova, M.

ORG: Institute of Pharmacology, CSAV, Bratislava (Farmakologicky ustav CSAV)

TITLE: Passage of cardenolides through the small intestine of rats in vitro [This paper was presented during the Twelfth Pharmacologic Days, Smolenice, 27 Jan 65.]

SOURCE: Ceskoslovenska fysiologie, v. 14, no. 4, 1965, 322

TOPIC TAGS: rat, digestive system, biologic metabolism, carbohydrate, processed plant product, biochemistry

ABSTRACT: Study of convallatoxin and helveticoside revealed the presence of convallatoxol (C-10-aldehyde-reduced convallatoxin metabolite) and strophantidine (i.e. de-rhamnose convallatoxin) in rat jejunal lumen in vitro 4 hours after immersion; 2 unidentified metabolites as well intact convallatoxin were also present; at the same time helveticoside, strophantidine and an unidentified metabolite were identified. The C-10 (steroid ring) reduction is a key step in the metabolism of cardenolides. Quantitative analysis of breakdown and speed of intestinal transfer agree with the relatively poor effect of peroral strophantidine cardenolides.

[JPRS]

SUB CODE: 06 / SUBM DATE: none

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Cord 1/1

"APPROVED FOR RELEASE: 06/19/2000

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ZATHURECKY, L.; KRUPA, V.; ROCHOVA, M.; HUBIK, J.

Stability of the fat in wool in the presence of some anti-oxidants. Cesk. farm. 14 no.1:2-8 Ja '65

1. Farmakologicky ustav Ceskoslovenskej akademie ved,
Pracovisko Bratislava.

KRUPA, V.A.

AID P - 2620

Subject : USSR/Meteorology
Card 1/1 Pub. 71-a - 23/26
Author : Krupa, V. A.
Title : ~~On the exhibit of economic and cultural achievements~~
of the USSR in Peking
Periodical : Met i gidr, 4, 60-61, J1/Ag 1955
Abstract : A detailed account of the 1954 exhibit which had an
entire section devoted to hydrometeorology. Soviet
specialists read reports on their latest technical
achievements in order to acquaint Chinese visitors
with the latest Soviet methods.
Institution : None
Submitted : No date

KRUPA, Wasył, mgr. inż.; JUKOWY, Jerzy, mgr. inż.

Digital integrators and their application. category 10 no.8:
357-360 J1'84

KRUPACHEV, I. F.

20122 KRUPACHEV, I. F. Kombinirovanniye raneniya grudi i zhivota. V sb i
Voprosy grudnoy khirurgii T.P.M., 1949, s. 159-64.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.

KRUPACHEV, I. F.

Major, Med. Corp

"Sub-Diaphragmal Abscesses in Post-Traumata of the Thoracico-Abdominal
Region," Khirurgiya, No.3, 1949

Evacuation Hospital

KRUPACHEV, I. F.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
KRUPACHEV, I. F.	"Blood Supply to the	Institute of Experimental
OGNEV, B. V.	Cerebral Cortex Under	Pathology and Cancer Therapy,
METAL'NIKOV, N. N.	Normal and Pathological	Academy of Medical Sciences
KRUZHIKOV, V. A.	Conditions"	USSR

SO: W-30604, 7 July 1954

KRUPACHEV, I.F.

[Arterial system of the human cerebellum] Arterial'naja sistema
mozhechka cheloveka. Moskva, 1956. 21 p. (MLRA 10:5)
(CEREBELLUM--BLOOD SUPPLY)

USSR / Human and Animal Morphology (Normal and Pathological).
Cardiovascular System.

S

Abs Jour : Ref Zhur Z. Biol., No 21, 1958, No 97083

Author : Krupachev, I.F.

Inst : Not given

Title : On Classification of the Arteries of the Human Cerebellum.

Orig Pub : Vopr. neyrokhirurgii, 1957, No. 6, 14-16

Abstract : A classification of cerebellar arteries and their branches, based on a topographo-anatomical principle, is cited. Their division into parts and segments is given, and zones of blood supply are pointed out.

Card 1/1

EXCERPTA MEDICA Sec 8 Vol 12/8 Neurology Aug 59

3598. THE TOMOGRAPHY OF ARTERIES OF THE PONTO-CEREBELLAR ANGLE (Russian text) - Krupachev I. F. - VOPR. NEIROKHIR. 1957, 6 (17-18)

The structure of the cerebellar arteries shows definite characteristics according to age, such that in adults, as distinct from children, there is observed a greater tortuosity of the vessels in the shape of arcs and loops formed by the stems of the cerebellar arteries in the various parts of the cerebellum. Where there is a strong development of the anterior inferior cerebellar artery and a high origin of the posterior inferior cerebellar artery, the stems of the two arteries form extensive arcs lying within the limits of the ponto-cerebellar angle. The wide arc traversing the antero-inferior surface of the pons, the middle cerebellar peduncle, the flocculus, the biventral lobule and the tonsil, is very often formed by the anterior inferior artery and less frequently by the posterior inferior artery. Usually one arterial stem is distributed to the antero-inferior surface of the pons, but two may be found; in the latter case, the stems of the anterior inferior and posterior inferior arteries, or the stems of the anterior inferior and medial inferior cerebellar arteries, are most frequently distributed to the area mentioned. In the region of the middle cerebellar peduncle the stems of the cerebellar arteries are distributed in the same order as on the antero-inferior surface of the pons. In the region of the anterior quadrate lobule (on its anterior surface) a strongly developed external branch of the superior cerebellar artery can most frequently be observed, more rarely (in 20% of cases) the stem of the anterior inferior cerebellar artery, sometimes together with a strongly developed branch of the superior cerebellar artery. In the region of the flocculus one arterial stem is most commonly met with. Where two arterial stems are distributed within the boundaries of the flocculus, they most frequently belong to the anterior inferior and posterior inferior and less commonly to the anterior inferior and medial inferior cerebellar arteries. The topography of the arteries lying in the region of the flocculus is similar to that of the arteries distributed to the inferior surface of the pons and middle cerebellar peduncle. In either region, two arterial stems are seen more frequently on the right (in 24% of cases) than on the left (in 12%). This is explained by the fact that the posterior inferior cerebellar artery (where it has a high origin) and the middle inferior cerebellar artery arise from the basilar artery more frequently on the right than on the left. In the pontocerebellar angle itself, the vascular formations are more marked on the right than on the left. In the region of the tonsil of either side, one arterial stem is most commonly distributed.

ANGLE (Russian text)
6 (17-18)

3598

The structure of the cerebellar arteries shows definite characteristics according to age, such that in adults, as distinct from children, there is observed a greater tortuosity of the vessels in the shape of arcs and loops formed by the stems of the cerebellar arteries in the various parts of the cerebellum. Where there is a strong development of the anterior inferior cerebellar artery and a high origin of the posterior inferior cerebellar artery, the stems of the two arteries form extensive arcs lying within the limits of the ponto-cerebellar angle. The wide arc traversing the antero-inferior surface of the pons, the middle cerebellar peduncle, the flocculus, the biventral lobule and the tonsil, is very often formed by the anterior inferior artery and less frequently by the posterior inferior artery. Usually one arterial stem is distributed to the antero-inferior surface of the pons, but two may be found; in the latter case, the stems of the anterior inferior and posterior inferior arteries, or the stems of the anterior inferior and medial inferior cerebellar arteries, are most frequently distributed to the area mentioned. In the region of the middle cerebellar peduncle the stems of the cerebellar arteries are distributed in the same order as on the antero-inferior surface of the pons. In the region of the anterior quadrate lobule (on its anterior surface) a strongly developed external branch of the superior cerebellar artery can most frequently be observed, more rarely (in 20% of cases) the stem of the anterior inferior cerebellar artery, sometimes together with a strongly developed branch of the superior cerebellar artery. In the region of the flocculus one arterial stem is most commonly met with. Where two arterial stems are distributed within the boundaries of the flocculus, they most frequently belong to the anterior inferior and posterior inferior and less commonly to the anterior inferior and medial inferior cerebellar arteries. The topography of the arteries lying in the region of the flocculus is similar to that of the arteries distributed to the inferior surface of the pons and middle cerebellar peduncle. In either region, two arterial stems are seen more frequently on the right (in 24% of cases) than on the left (in 12%). This is explained by the fact that the posterior inferior cerebellar artery (where it has a high origin) and the middle inferior cerebellar artery arise from the basilar artery more frequently on the right than on the left. In the pontocerebellar angle itself, the vascular formations are more marked on the right than on the left. In the region of the tonsil of either side, one arterial stem is most commonly distributed, rarely two. Where there is one arterial stem, it usually belongs to the posterior inferior, and only rarely to the anterior inferior cerebellar artery. Where both arterial stems are present, they belong to the two arteries mentioned. The stem of the posterior inferior cerebellar artery quite often forms a very well developed arc or scroll lying on the internal surface of the tonsil.

3598

A loop of the descending portion of the stem of the posterior inferior cerebellar artery, arising from the vertebral artery, is distributed to the medulla oblongata. The distribution of the loop of the artery mentioned to the region of the posterolateral parts of the medulla oblongata and inferior cerebellar peduncle is observed on the left in 88% of cases and on the right in 78%. The stem of the posterior inferior cerebellar artery is distributed in consequence of a high origin (from the basilar artery) more externally to the medulla oblongata, on the left in 10% of cases and on the right in 16%; in 2% of cases on the left and in 6% on the right this artery is missing. The variability of the development and position of the cerebellar arterial stems, and their anatomical relationships with the roots of the craniocerebral nerves create a complicated topography in the area of the pontocerebellar angle. The author is of the opinion that it is essential to delimit 4 arterial zones, which should be characterized as danger zones where large arterial stems are concentrated. These are the zones of the pons, of the middle cerebellar peduncle, of the flocculus and of the tonsil.

Darbinyan - Moscow (VIII, 14, 18)

KRUPALA, J.

Scraping instead of grinding in cemented gear wheels. p. 161. (Strojirenska Vyroba. Praha. Vol. 5, no. 4, Apr. 1957.)

SC: Monthly List of East European Accessions (EEAL) IC., Vol 6, no. 7, July 1957. Uncl.

KHUPALA, JERZYSLAV, graduate, born 1940; SIBIRSKY, VACLAV

Typification of spur gears for gear boxes and built-in transmissions. Stroj vyr 12 no.2:98-101 '64.

1. Vyzkumny ustav naftovych motoru, Praha.

the necessity of slowing methods in winning. With thick seas located closely
the concentration in place and in the must be conducted so that
follow

the

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KEUPAR, ~~SEA~~, G, Jr

Laboratory tests with hard metal bits. p. 412 Vol. 11 No. 7 BANYASZATI
LAPOK. Budapest, Hungary. July 1956.

SOURCE: East European List, (EEAL) Library of Congress Vol. 6, No. 1
January 1956.

KRUPAR, Z.

"Research institutes in the report on the Gottwald Five-Year Plan." (p. 110).
STAVIVO (Ministerstvo stavebnich hmot) Praha, Vol 32, No 4, Mar. 1954.

SO: East European Accessions List, Vol 3, No 8, Aug 1954

KRUPAR, Z.

"Our research organization in the Gottwald Five-Year Plan." (p. 146). STAVIVO
(Ministerstvo stavebnich hmot) Praha, Vol 32, No 4, Mar. 1954.

SO: East European Accessions List, Vol 4, No 8, Aug 1954

KRUPAROVA, M.

Changes in the biological value of sweetened condensed milk
during heating. Cesk. hyg. 10 no.3:264-266 My '65.

1. Ustav hygieny, Praha.

Application of the method of sections to the determination of equilibria in three-component systems with solid phases. N. V. Merzhanin and L. I. Kravtchenko. *Zh. fiz. khim.* (U. S. S. R.) 19, 1999-2003 (1945). -- The composition of solid phases in equil. 3-component systems of the eutectic type and the compo. of lines representing unimodal, univ. (including the compo. of the eutectic) can be det. by the method of sections. The method also permits detg. the position on the diagram of the limiting nodes of 3-phase equil. (crystals of one of the solid components + eutectic), eutect. (crystals of two of the solid components + liquid), eutecticoid, $\text{In}(\text{NH}_3)$, and NaN_3 (from their aq. solns.) and dilut. water were used for the aq. solns. The synthetic points were composed along a section characterized by a constant ratio $\text{Pb}(\text{NO}_3)_2/\text{NaN}_3$ expressed by $5/30$, $10/20$, $20/10$, $30/10$, $40/10$, $50/10$ and $60/10$. The value of α , detd. by the yellow Na line (α_0), was selected for measuring the physical properties. All functional curves are analogous; each consists of 3 definite parts. The 1st part (representing the α/β values of unimod. solns.) is a straight line rising rapidly with decrease in the water content of unimod. solns. The 2nd part (representing the unimodal soln.) is represented by nearly straight lines, also rising with decrease in the water content in the eutectic phase, but to a considerably smaller degree than in the unimod. solns. The points of intersection between these 2 parts can be easily detd. graphically. The 3rd part of the functional curves (corresponding to compositions where liquid part is represented by $\text{In}(\text{NH}_3)$) is a straight

line which does not depend on the concn. of the complexed and which has the same value as one of its parameters (nV 1.005). Therefore, the points of the intersection of the first and last parts of the functional curves can be detd. easily by purely geometrical methods. By plotting the values obtained on the rumpus triangle it is possible to construct the lines of constant concn. In regard to NaNO_3 and $\text{Pb}(\text{NO}_3)_2$ and the limiting index. The concn. of the eutonic soln. (H_2O 41.3, NaNO_3 42.0, $\text{Pb}(\text{NO}_3)_2$ 16.2 wt. %) can be detd. geometrically from the intersection of the nodes. By using the method of least squares it is possible to represent analytically the limiting index of the 2-phase region by the equation $Y = -1.401x + 00.53$ and $Y = -1.016x - 1.1$, where Y is the wt. percentage of NaNO_3 and x the wt. percentage of H_2O . The eutonic coordinates obtained by solving these equations (H_2O 41.3, NaNO_3 41.3, $\text{Pb}(\text{NO}_3)_2$ 17.4 wt. %) differ slightly from the concn. of the eutonic soln. when detd. geometrically from the intersection of the nodes, but this difference does not exceed ± 1 wt. %. Two references.

W. R. Henn

W. R. Hewitt

2

Homogenization of binary liquid by a third component.
 L. A. Kuznetsov and M. A. Bodin. *J. Gen. Chem.*
 (U.S.S.R.) 19, 1988-9 (1947) (in Russian).—(1) In the
 binary system (iso-Pr)₂O-H₂O, mutual soly. is slight and
 varies little with the temp.; at 20, 25 and 60°, soly. of
 (iso-Pr)₂O in H₂O is 0.9, 0.7, and 0.7%, that of H₂O in
 (iso-Pr)₂O, 0.8, 1.0, and 1.0%. By extrapolation, it is
 concluded that the system has no lower, but does have an
 upper, crit. point. (2) The 20° and 60° isotherms of the
 ternary system (iso-Pr)₂O-H₂O-iso-PrOH lie very close
 to each other. iso-PrOH is an efficient homogenizer of
 (iso-Pr)₂O-H₂O mixts.; the max. amt. necessary for com-
 plete homogenization is about 40%. In terms of temp.,
 mutual soly. increases with rising temp. from (iso-Pr)₂O to
 a point A, (iso-Pr)₂O 37.5, iso-PrOH 42.0, H₂O 21.0%;
 this is reversed between A and a point B 9.4, 36.8, 53.8%,
 and again reversed between B and C, 1.2, 13.8, 85.0%, and
 once more between C and H₂O, i.e., along the last portion
 only, at 20° is slightly higher than at 60°; thus, between B
 and C, the temp. dependence of the soly. of (iso-Pr)₂O in
 H₂O in the presence of iso-PrOH is reversed as compared
 with the binary system. But for that portion, the given
 ternary system is illustrative of the case of interaction of
 binomials. At 20°, complete upper and lower limits have
 the compns. (iso-Pr)₂O, (iso-Pr)₂O, H₂O: 25, 35, 7 and
 25, 6, 69%; 15, 76, 6 and 24, 2, 74%; 7, 90, 3 and 12,
 1, 89%. By the tangent to the binodal curve drawn from
 the point of intersection of the tie-lines, the ternary
 crit. point lies at 42, 33.8, 23.8%, i.e. is shifted to the
 (iso-Pr)₂O-iso-PrOH side. N. Thou

ASB-BLA METALLURGICAL LITERATURE CLASSIFICATION

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QUALITY

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

KRUPATSKAYA, I. L.

"Application of the Section Method to Determining the Equilibria in Three-Member Systems in their Solid Phases". Zhur. obshch. Khim. 10, No. 22, 1940. Laboratory of Inorganic Chemistry, Molotov State University, Molotov. Received 13 June 1940.

Report, U-1612, 3 Jan. 1952.

KRUMHOLTZ, I. L.

Curves, Isothermic

Ternary systems with closed stratification isotherms. Zhur. ob. khim. No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 1952 ~~1953~~, Uncl.

KRUPATKIN, I. L.

"Ternary Systems with Closed Layering Isotherms" (p. 184)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii) 1952, Vol. 22, No. 2

KRUPATKIN, I.L.

Ternary systems with closed layering isotherms. Zhur. Obshchey Khim. 22, 184-90; J.Gen.Chem. U.S.S.R. 22, 229-35 '52 [Engl. translation]. (MLBA 5:5) (CA 47 no.19:9743 '53)

from 61" to 60" I to 60" I with 12% in the 1.460 range. 94.5% in 2 phases of 1.460 H and 1.460 I

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KRUPATKIN, I. L.

Study of Metastable Equilibria of Liquid Phases I, Page 151, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol I, Moscow-Leningrad, 1953, pages 762-766

Chair of Chemistry, Cherkassk State Pedagogical Institute

KRUPATKIN, I. L. and LESHCHINSKIY, E. F.

On Mutual Transitions of Stratification Zones, Page 144, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol I, Moscow-Leningrad, 1953, pages 762-766

Chair of Chemistry, Cherkassk State Pedagogical Institute

KRUFATKIL, I. L.

Study of Metastable Equilibria between Liquid Phases. II, page 1221, Sbornik
Statey po obshchey khimii (Collection of Papers on General Chemistry), Vol II,
Moscow-Leningrad, 1953, pages 1680-1686.

Cherkassk State Pedagogical Inst

KRUPATKIN, I. L.

Relative Positions of Stratification Isotherms, page 771,
Sbornik statey po obshchey khimii (Collection of Papers on General
Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

Cherkassk State Pedagogical Inst

✓ Investigations of metastable equilibria between liquid phases. III. I. L. Kuznetsov. *Zhur. Obshch. Khim.* 29, 1090-1103 (1953); *Ch. LVI*, 45, 12332c. — As an example of a ternary system in which only one component remains in the solid phase the system S-diphenylamine (I)-2-naphthylamine (II) was investigated. The 2 unknown binary systems of this ternary were detd. I-II is a simple eutectic with 83% I at 42°. In the binary system S-II the crystn. curve consists of a eutectic of 65% S at 101° and a practically horizontal section between 60 and 50% S at 103°. The latter is directly above the consolute point, 100.5° with 75.05% S, of the binodal curve of conjugate solas. The ternary system was delineated by means of 6 planes passing through the S edge of the prism and crossing the I-II binary at 10, 20, 40, 60, 70, and 80% II. All polytherms consist of a continuous crystn. curve over a binodal curve with a well-defined consolute point. A plane passing through the consolute points of all the polytherms cutting the crystn. curves directly above consists of 2 almost parallel curves with slight dips: at 96° with 46% II in the binodal curve and a shallower dip, at 101°, in the crystn. curve. Isotherms through the prism at 85, 90, 95, 100, and 105° consist of a family of similar curves indicating max. S soly. in the liquid phase with a mol. ratio of 1:1. At 95° the max. soly. of liquid S is 60% in mixed amines compared with the soly. at 95°, in the individual liquids of 45% S; the soly. of solid S in the combined liquids is 45% as compared with 30% in the individual liquids. The remarkable characteristic of this ternary system is a continuous binodal surface passing from the binary S-I to that of S-II and a continuous crystn. surface over it; the same component crystg. out and dissolving at temps. above the consolute temps. This cannot fully be explained by Mertslin's theory (cf. Mertslin and Vasev, *Ch. 46, KGBA*) and suggests the existence of "hidden" conjugate solas. I. Benowitz.

2

Krupatkin, I. L.

2

Chem ✓ The metastable equilibria between liquid phases.
I. L. Krupatkin. *J. Gen. Chem. U.S.S.R.* 25, 1509-10.
(1950) (Engl. translation).—See *C.A.* 50, 6164f.

1.1
B. M. R.
BM

KRUPATKIN, I. L.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.
Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61041

Author: Krupatkin, I. L.

Institution: None

Title: Investigation of Unstable Equilibria Between Liquid Phases. IV.

Original

Periodical: Zh. obshch. khimii, 1955, 25, No 9, 1640-1645

Abstract: Studied were equilibria in the system picric acid (I)-salicylic acid (II)-water (III). Binary systems: (1) I-II. There was found a region of stable equilibrium between liquid phases with an upper critical point; (2) II-III. There was found a region of unstable equilibrium between liquid phases with an upper critical point over which is an almost horizontal portion of the crystallization curve; (3) I-III. The system is homogeneous in stable and unstable state. In the system was found a picrate of molecular composition 1:6 (21.64% picric acid) stable in the liquid phase. The investigation was carried out by the polythermal method; on the basis of

Card 1/2

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.
Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61041

Abstract: the obtained polytherms were plotted isotherms for 65, 68, 70, 80 and 90° the projections of which are reproduced on the composition triangle of the ternary system. At temperatures of 70°, 80° and 90° stratification isotherms are disposed in the form of 2 separate binodal curves. At 68.5° these curves are touching and at lower temperatures they merge to form a singular synclinal edge extending along the straight line joining the apex of water and the pole of composition of picrate (1:6). Communication III, see Referat Zhur - Khimiya, 1955, 11288.

Card 2/2

KRUPATKIN, I. L.

- Ternary systems with separation [of phases] without
formation of chemical compounds. I. L. Krupatkin, J.
Gen. Chem. U.S.S.R. 25, 1816-10 (1950) (translation).
See C.A. 50, 6108f. R. XI. R.

PM
24

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3

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6

6

KRUPAIKIN, L. L.

2000

Ternary systems with separation, without formation of chemical compounds (A. L. Krupai, *Zh. obshch. Khim.*, 1957, 23, 1871).
 1871. Investigation was made of the equilibrium between the liquid phases in ternary systems with two binary separations in the following systems: water-methyl alcohol-*tert*-amyl alcohol (I); water-*o*-toluidine-aniline (II); glycerol-*o*-toluidine-diethylamine (III); and glycerol-furfural-benzaldehyde (IV). Three isothermal solubility curves are described, which take the form of: (a) a straight line (II), (b) a curve with positive deviation (IV), or (c) curves with negative deviation (I and III). On all these curves, solubility changes smoothly between points of solubility of the third component in components of the binary homogeneous system without formation of any special points on the isotherms. The deviations (b) and (c) of the solubility curves from straight lines are explained by processes of association and dissociation within the binary homogeneous system.
 A. L. B.

PM

KRUPATKIN, I.L.

Application of V.F.Alekseev's rule to ternary systems. Zhur.
ob.khim. 25 no.11:2023-2028 0 '55. (MLRA 9:4)

1.Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Phase rule and equilibrium)

"APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000826720015-0

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000826720015-0"

KRUPATKIN, I.L.

Method of two solvents. Zhur.ob.khim.25 no.12:2189-2198 N '55.
(MIRA 9:4)

1.Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Solvents) (Phase rule and equilibrium)

"APPROVED FOR RELEASE: 06/19/2000

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KRUPATKIN, I. L.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.
Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61019

Author: Krupatkin, I. L.

Institution: None

Title: On the Rule of Reverse Similarity

Original

Periodical: Zh. obshch. khimii, 1955, 25, No 13, 2420-2426

Abstract: For the equilibrium of 2 liquid phases the author proposes a rule of "reverse similarity": In the concentration triangle of a ternary system with an equilibrium between 2 liquid phases we draw a straight line parallel to the side of the binary predominant system (this term is used to denote that binary system in which the interaction predominates over the interaction in the 2 other binary systems), approximately at the middle of the diagram, limited by the solubility curves this concentration line will divide the isotherm of stratification into 2 branches which qualitatively will

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USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.
Physicochemical Analysis. Phase Transitions, B-8

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61019

Abstract: be similar to each other but will be reverse in their curvature
and disposition of their geometrical elements. The regions of
applicability of this rule are shown.

Card 2/2

CONFIDENTIAL

USSR/Statistical Physics - Thermodynamics.

D-3

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11421

Author : Krupatkin, I.L.

Inst :

Title : Determination of Critical Points of Solubility.

Orig Pub : Nauk. zap. Cherkas'k. derzh. ped. in-t, 1956, 8, 65-68

Abstract : An analysis is given of the existing methods, and a new method is proposed for exact determination of the coordinates of the critical point of solubility on the equilibrium curve between the liquid phases.

Card 1/1

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-
chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29923

Author : Krupatkin I. L.

Inst : not given

Title : Theory of Stratification of Liquids

Orig Pub: Zh. neorgan. khimii, 1956, 1, No 6, 1210-1222

Abstract: Investigation of linear rate of stratification in binary systems phenol - water (I), sulfur - alpha-naphthylamine, sulfur - beta-naphthylamine, sulfur - diphenylamine and sulfur - quinoline, depending on composition of the initial solution and the degree of supercooling. Linear rate of stratification and also the rate of phase-layer separation are maximum in the case of compositions corresponding to the critical point, and are minimum in the case of compositions at the edges of the binodal curve. Kinetics of stratification of (I) has been studied by the microphotographic method. It was

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Category: USSR / Physical Chemistry

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29923

found possible to distinguish 3 stages of the process: a) formation of latent stratification state; b) formation of two liquid phases and propagation of the stratification front throughout the entire system; c) phase-layer separation. A qualitative picture is proposed of the stratification mechanism, which explains a number of specific features of this process.

Card : 2/2

-41-

Krupnik, J. L.

✓ The development of separation of phases in ternary systems consisting of homogeneous binary systems. J. L. Krupnik, State Pedagog. Inst., Chernysy, 2000. *Doklady Akad. Nauk*, 26, 370-3 (1956). The sepn. of phases was studied in the ternary system antipyrine (A)-chloral hydrate (X)-H₂O under conditions in which the constituent binary systems do not show sepn. of phases. Two compounds, X₁ f. m. 61.8°, and X₂ f. m. 62.3°, form in the system X-A. The chloral-water system was studied in conjunction with the X-H₂O system. The sepn. of phases in the chloral-water system occurs at 175.00°. On this basis it was supposed that the X-H₂O system exists in a state of "incipient phase sepn." at lower temps. The system A-H₂O was considered to be in the same state since its crystal. curve has a horizontal portion (30-70% A at 80°). The polythermic cross sections of the ternary system prism were studied and the areas of phase sepn. were established. The crit. curve drawn through the max. of polytherms exhibits a point of inflection when plotted on triangular coordinates. The triple crit. point (21.3% A, 18.7% X, 60.0% H₂O at 88°), which coincides with the point of inflection, is deriv. from the isothermal graphs on the triangular coordinates. The reasons for the sepn. of phases in the system, A-X-H₂O, and other analogous systems are: the formation of a compd. or a complex (in this case X₂) in the prevailing binary system; the limited soly. of this compd. in the 3rd component; and the presence of one or more binary systems in a state of "incipient phase sepn." A. Doung.

Krupatkin I.L.

B-8

USSR/Thermodynamics - Thermochemistry. Equilibria.
Physical-Chemical Analysis. Phase Transitions.

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18527

Author : I.L. Krupatkin.

Title : Study of Phase Equilibrium in Pyramidon - Salicylic
Acid - Water System.

Orig Pub : Zh. obshch. khimii, 1956, 26, No 4, 1050-1062

Abstract : The equilibrium in the system pyramidon (I) - salicylic acid (II) - water (III) was studied. Two compounds of the composition 1 : 1 (melt. p. 97°) and 1 : 3 with the melting point at 94° (decomp.) were found in the system I - II. One transition point (93.5°, 63% of II) and two eutectic points (87°, 18% of II, and 82°, 51.5% of II correspondingly) were found. In the system I - III, on the separation curve, two critical points were discovered: a metastable lower point (68°, 55% of III) and an upper one (169°, 60% of III). In the zone of the

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USSR/Thermodynamics - Thermochemistry. Equilibria.
Physical-Chemical Analysis. Phase Transitions.

"APPROVED FOR RELEASE: 06/19/2000

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Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18527

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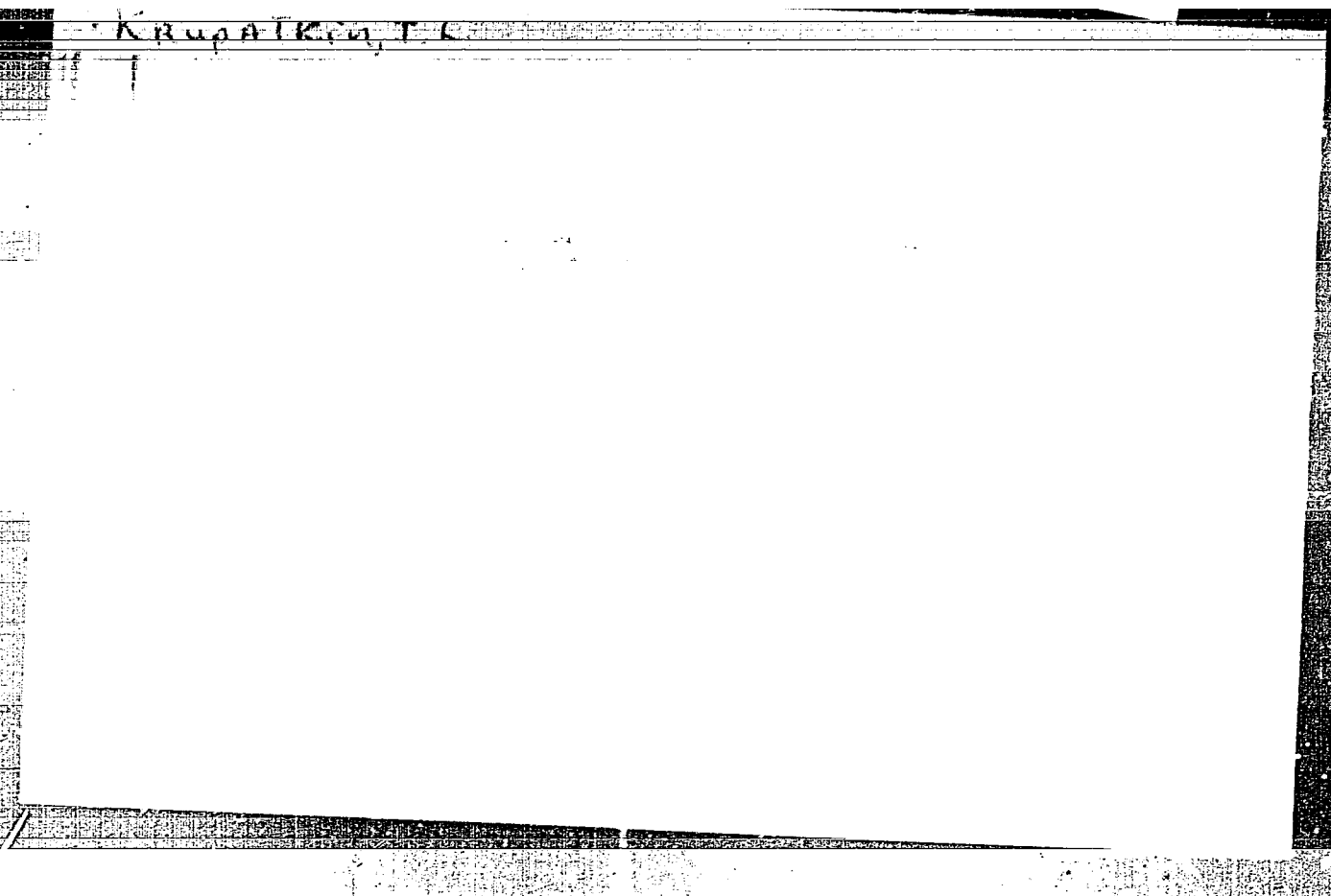
crystallization curve at 70.5° the monotectic equilibrium is accomplished. Two separation surfaces (SS) are fixed in the system I - II - III, there is between them an homologous zone, through which the section of the prism of the compound of the composition 1 : 1 passes. This compound is detected in the liquid phase and is of a hydrophilic nature. On the SS butting against the face of the binary system II - III, an upper ternary critical point (138.5°, 16% of I, 29% of II) was discovered; it is situated in the section of the prism of the compound of the composition 1 : 3, which is of hydrophobic nature. The author emphasizes that the separation studies permit in many cases to judge about the structure of compounds forming in systems.

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KRUPATKIN, I.L.

Study of metastable equilibria among liquid phases. Part 5.
Zhur.ob.khim. 26 no.7:1831-1837 J1 '56. (MLBA 9:10)

1. Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Phase rule and equilibrium) (Diphenylamine) (Quinoline)

KRUPATKIN, I.I.

Investigation of unstable equilibria between liquid phases.
Zhur.ob.khim. 26 no.12:3240-3246 D '56. (MLRA 10:7)

1. Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Phase rule and equilibrium)

KRUPATKIN, I.L.

Lamination in two-component chemical systems. Zhur. ob. khim. 27 no.3:
561-566 Mr '57. (MIRA 10:6)

1. Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Systems (Chemistry))

KRUPATKIN, I. L.

Using the method of two solvents for studying interactions in liquid systems. Zhur. ob. khim. 27 no.3:567-573 Mr '57. (MIRA 10:6)

1. Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Systems (Chemistry)) (Antipyrine) (Benzoic acid)

KRUPATKIN, I.L.

Investigation of irrational systems by means of two solvents.
Zhur.ob.khim. 27 no.5:1113-1118 My '57. (MLRA 10:8)

1.Cherkasskiy gosudarstvennyy pedagogicheskiy institut.
(Systems (Chemistry))

AUTHORS: Krupatkin, I. L., and Todorov, I. A. 77-11-2/56

TITLE: An Investigation of the States of Equilibrium Between Phases in the System Pyramidon-Diethylamine-Water (Issledovaniye fazovykh ravnovesi v sisteme piramidon-diethylamin-voda).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 2916-2921 (USSR).

ABSTRACT: The properties of homogenization of the compounds forming in systems are hardly investigated, although they may be of practical importance in the selection of mixed solvents. It was not the system pyramidon-salicylic acid-water as in the preceding investigation which was taken here, but the now system pyramidon-diethylamine-water, where the presence of the dissociated compound could be determined in the prevailing system pyramidon-diethylamine. This compound and the two double systems separating in layers permit the assumption that two individual domains of the separation of layers exist in the triple system selected. The double system pyramidon-diethylamine was investigated with regard to fusibility. An incongruently melting compound was determined in this system. The system pyramidon-diethylamine-water was investigated regarding the separation of layers and the fusibility. The diagram of the state of the triple system indicates two individual surfaces of the separation of layers, with lower critical points.

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An Investigation of the States of Equilibrium between Phases in the 79-11-2/56
System Pyramidon-Diethylamine-Water.

This kind of equilibrium between the liquid phases depends on the strongly homogenized qualities of the compound of the prevailing double system which are connected with the dissociation in the third component, water. The contact section (kazaniye) and the point of contact for low critical temperatures were found at the surface of the separation of layers on the double system. There are 4 figures, 1 table, and 6 Slavic references.

ASSOCIATION: Cherkassy State Pedagogical Institute (Cherkasskiy gosudarstvennyy pedagogicheskiy institut),

SUBMITTED: November 17, 1956.

AVAILABLE: Library of Congress.

1. Pyramidon-Diethylamine-Water system-Phase studies
2. Chemical equilibrium-Analysis

Card 2/2

AUTHORS: Krupatkin, I.L., Todorov, I.A. 153 58-1-4/29

TITLE: The Kinetics of the Separation Into Layers of Liquids in Systems With Maximum Critical Points (Kinetika rasslaivaniya zhidkostey v sistemakh s verkhnimi kriticheskimi tochkami)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 20-27 (USSR)

ABSTRACT: On the strength of kinetic and microphotographical investigations of the decay of liquid solutions and of the study of the equilibrium of liquid phases one of the authors (Ref 1,2) already at an earlier date worked out a theory of the mechanism of the separation into layers of liquids. This theory provides for three stages of separation. In order to extend the applicability of this theory the authors investigated the kinetics of the separation into layers of liquids in the system n-nitrophenol - water with stable separation into layers. It was shown that the laws and rules governing kinetics confirm the correctness of the suggested theory of the mechanism of the separation of liquids into layers. Furthermore, the kinetics of the separation of liquids

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The Kinetics of the Separation Into Layers of Liquids
in Systems With Maximum Critical Points

153-58-1-4/29

into layers was investigated in the system salicylic acid - water with a metastable separation of liquids into layers. It was possible to prove that the kinetics of metastable separation into layers is governed by the same laws as stable separation. There are 4 figures, 4 tables, and 6 references, 4 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskoy institut. Kafedra
neorganicheskoy khimii (Ivanovo Chemical-Technological Institute.
Chair of Inorganic Chemistry)

SUBMITTED: September 7, 1957

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5(2)

AUTHORS:

Krupatkin, I. L., Todorov, I. A.

SOV/153-58-3-3/30

TITLE:

The Kinetics of Separation Into Layers in Systems With Lower Critical Points (Kinetika rasslaivaniya zhidkostey v sistemakh s nizhnimi kriticheskimi tochkami)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 3, pp 15 - 20 (USSR)

ABSTRACT:

The theory of the mechanism of the process under review was elaborated in systems with upper critical points (Refs 1, 2). It may be assumed that it is applicable also to systems with lower critical points (Ref 3). An experimental proof, however, is required by the assumption that the latter systems do not differ in principle from the first ones in a particular phase equilibrium. That proof was the objective of this paper. Therefore the kinetics mentioned in the title was studied at lower stable and lower metastable critical points, i.e. in 2 kinds of systems of this type. The system of phenol-o-phosphoric acid was chosen because it is a double system with a stable lower critical point, and has already been investigated as to the separation into layers (Ref 4). Pyramidon and water

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The Kinetics of Separation Into Layers in Systems
With Lower Critical Points

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served as a double system with a metastable lower critical point (Ref 5). The results obtained for phenol-o-phosphoric acid are given in table 1, figure 1 and curve 1. The kinetics mentioned in the title for the system pyramidon and water is presented in table 3 and figure 3. For comparison, figure 1 gives the curve of the separation into layers (P_a) of the systems investigated with a lower critical point K. The dependence of the linear rate of extension of the separation into layers on the superheating was studied in the same mixtures (80.58% and 49.96% o-phosphoric acid) (Table 1, Fig 1, Curve 2). The latter curve is qualitatively very similar to curve 1 and has a distinctly marked maximum. The velocity mentioned increases by about the tenfold in the transition from 80.58 to 49.96% o-phosphoric acid. On superheating in a mixture that nearly corresponds to the critical point, the velocity mentioned is 3.5 times higher than that to be found in mixtures which are near the edges of the binodal surfaces. Figure 1 shows that superheating rapidly increases the linear rate of extension (up to the 14-fold).

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The Kinetics of Separation Into Layers in Systems
With Lower Critical Points

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Table 2 and figure 2 give the duration of the stratification of the phases in dependence on the concentration of the components in the whole concentration range below the stratification curve.

C o n c l u s i o n s: In the systems mentioned: a) with a stable stratification into layers and a lower critical dissolution temperature, and b) with a metastable equilibrium between the liquid phases and a lower critical point it was proved that the kinetics of the stratification into layers in systems with lower critical points obey the same laws as in systems with upper critical points. Thus it is confirmed that in both systems the phenomenon of the separation into layers takes place according to the same mechanism. Thus the theory of the mechanism of the separation into layers is fully applicable to systems with lower critical points both in stable and metastable state. There are 4 figures, 4 tables, and 5 Soviet references.

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The Kinetics of Separation Into Layers in Systems
With Lower Critical Points

SOV/153-58-3-3/30

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskoy institut (Ivanovo Institute of
Chemical Technology) Kafedra neorganicheskoy khimii (Chair
of Inorganic Chemistry)

SUBMITTED: September 3, 1957

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KRUPP-TKIN, I. I.

5(1)
APPENDIX

Vasil'yev, V. P., Savashova, V. D., 807/13-38-3-30/30
Tetrahedron, E. D.

TEXT

Conference Discussion on the Methods of Investigating the
Complex Formation in Solutions (Sovetskoye Khimicheskoye
po metodam issledovaniya kompleksobrazovaniya v rastvorakh)

PRELIMINARY

Investitsiya v khimicheskuyu tekhnologiyu, 1978, No. 3, pp. 173 - 174 (USSR)

ABSTRACT

From February 18 to 21, 1978 a conference discussion took
place at the town of Irkutsk. It dealt with the subjects
mentioned in the title. It was called on a decision of the
VIII All-Union Conference on the Chemistry of Complex
Formations. More than 200 persons attended the conference,
among them 103 delegates from various towns of the USSR.
At the conference methods of determining the composition of
the complexes in solutions were discussed, as well as the
methods of calculating the instability constants according
to experimental data and problems concerning the influence
of the solvent upon the processes of complex formation.
In the lecture by E. D. Savashova, E. D. Savashova and
V. P. Vasil'yev, "Complex Formation in the Solution", the results
of a systematic investigation in copper-quinoline-sulfoxide,
as well as in copper-pyridine-sulfoxide systems by means of
the optical method were dealt with. In the lecture by I. I.
Krupp-Tkin, the idea of a further investigation of the complex
formation processes in solutions was developed. Besides the
determination of the composition and stability of the complexes
also the physical and chemical properties, the chemical nature
and the structure of the complex compounds must be investi-
gated.

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1. Alkagereva and E. D. Tetrahedron in their lecture "Investiga-
tion of the Polymerization of α -Poly acids in Solutions"
mentioned experimental results of the investigation of the
polymerization in solutions of malonic acid. The authors
proved that especially the malonic acid within a certain
range of the pH values and the concentrations exists as a
number of compounds that can be expressed by an overall formula
 $\text{HnO}_4(\text{HnO}_3)_{n-2}$. In the lecture by E. V. Alkagereva and V. D.

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Alkagereva investigation results on basis salts taking into
account the complex formation in solutions by means of the
potentiometric method were mentioned for systems with zinc,
cadmium and indium. In the evaluation of their results the
authors employed the method of the table difference. The
calculation of the consecutive constants was carried out
according to the interpolation formula by Korten, E. A.
Chemically, the lecture on "pH Measurement Method of
the Solubility in Complex Systems" by V. D. Alkagereva and
Solubility Diagram of the System Cu^{2+} -EDTA - H_2O in Investi-
gating Complex Copper Compounds in Saturated Solutions". It
was found that the solutions at the bottom of the liquid is
more basic than the solutions. Furthermore, the increased
solubility of the solutions from the viewpoint of the formation
of hydroxide complexes in the solution was explained.
V. D. Alkagereva, especially in his lecture, he
pointed out the necessity of continuing the investigation
not only in the investigations of the polymerization, but also
chemistry in the chemistry of polymerization complexes, E. A.
Brimberg thinks that the new approach of the hydrolysis

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Conference Discussion on the Methods of
Investigating the Complex Formation in Solutions

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Investigation was developed by the Scandinavian school in of high value. It was also pointed to the necessity of studying the kinetics of the polymerization process and a quantitative determination of the strength of the polymers. A. E. Babko pointed out that the study of the polymer structure was necessary. E. P. Zinov'eva mentioned in his lecture that the rather widely spread polymerization type according to the scheme "nucleus + chain members" is not obtained in all cases. The following collection took part in the discussion: A. E. Babko, A. V. Ablov, I. E. Shustova, I. V. Tsvetkov, V. E. Gellachov, A. E. Babko then discussed in his lecture "Methods of Determining the Dissociation Constants of the Complexes in Solutions" the main principles of determining the instability constants. E. P. Zinov'eva discussed in his lecture the "Calculation Methods of the Instability Constants of the Complex Compounds According to Experimental Data" the principles of using the known calculation methods of the instability constants for various cases of the complex formation in solutions. If several monomolecular complexes are formed the displacement method by Ablov and Isidorov (employed by A. E. Babko) cannot be recommended for the calculation of the instability constants. The lecturer discussed the displacement method of the complexes proposed by J. Perron, Leden, Benetti, Matheson, Isidorov and other authors. The constants calculated in this way are not very accurate. It was proved that the method of successive approximations can lead to wrong conclusions as to the stability of the complexes in the system investigated. The most reliable value of the physical constants can be obtained by the method of the least squares. E. V. Pliginsk, Ye. E. Isidorov and E. I. Vlasovskaya described the determination methods of the instability constants of the complex compounds of alcohols, amines and iron which are based on the investigation of the equilibrium constants of the complex formation by silver ions. E. E. Isidorov, I. V. Tsvetkov and G. S. Zakharenko held a lecture "The Role of the Fine Factor in the Investigation of the Complex Formation". In the discussion on the lectures A. A. Grishchenko mentioned that due to the size adjustment of the equilibrium constants the methods discussed of determining the instability constants (precipitation and solubility) can often not be employed. A. V. Ablov pointed out the necessity of deriving direct methods of proving the existence of the complexes in a step-wise complex formation. E. B. Isidorov mentioned that the instability constants of clearly dissolving complexes can be calculated from thermodynamic data. E. P. Zinov'eva, A. E. Babko among others took part in the discussion on the lecture. A. E. Babko requested inclusion in the next conference on the chemistry of complex compounds a lecture on the determination methods of the instability constants which should be discussed by the example of actual cases. This should clarify the methods of evaluating the experimental data on the formation of the complexes. E. P. Zinov'eva stressed that in the determination of the instability constants all chemical equilibria should be taken into account that render complex the complex formation process in the solution, especially the hydrolysis processes of the central ion and the ligand. V. E. Gellachov, A. V. Ablov, I. E. Shustova and A. E. Babko then discussed the application of the Displacement Method in the investigation of the Stability Constants

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Conference Discussion on the Methods of
Investigating the Complex Formation in Solutions

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of some Thorium Complex Compounds" results obtained from the experimental investigation of the distribution of thorium complexes in the systems: acetylacetone - benzene - water, and 2-ethyl-4-methylphenol - benzene - water. From these data, the instability constants of the thorium complexes with acetylacetone and 2-ethyl-4-methylphenol were calculated. I. V. Tsukanov, G. S. Serghienko and Ye. V. Gerasimov held a lecture on the application of the solubility method in the determination of the stability of complex compounds in solutions. In this lecture also other methods were discussed (of measurement, measurement of the optical density, as well as of the heat of mixing). B. D. Zaitsev held a lecture on the "Application of the Solubility Method in Studying the Phthalocyanine Complexes of Metals". He presented the determined quantitative characteristics of the complexes of the transition of the phthalocyanines of cobalt, nickel, copper and zinc, as well as of the free phthalocyanine, into the sulfuric acid solution for the theoretical reasoning, and as an experimental proof of the existence of

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of the complexes investigated. These characteristics were derived as a proof of new electronic formulas of phthalocyanine and its complex derivatives. In the lecture delivered by E. Z. Zaitsev on "The Method of the Two Solvents as a Method of Investigating the Formation and Properties of Organic Complexes" it was proved that this method makes it possible to determine the number of complexes formed in the system, their composition, relative stability. V. I. Zaitsev, A. E. Babko, E. P. Zaitsev, E. S. Mustafin and E. I. Tsvetkov took part in this discussion. In the lecture delivered by A. A. Grinberg and B. P. Zaitsev on the complex palladium compounds (III) with a series of ligands, it was proved that in the case of a large number of ligands, the complexes with the coordination number 5 are formed. The instability constants of these complex compounds were calculated. L. E. Adzhemov mentioned a new simplification in the spectrophotometric investigation of the complex compounds that can be used in systems with the formation (or predominance) of one single complex. This method makes it possible to determine the composition and instability constant

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of the complex. In the lecture delivered by E. B. Zaitsev and V. B. Zaitsev on the application of the theory of crystal field for the determination of the composition and structure of the chlorate complexes of cobalt, nickel and copper, it was proved that in a hydrochloric acid solution, the equilibrium between tetrahedral and octahedral form of the cobalt chlorate complexes is shifted towards the tetrahedral form. E. P. Zaitsev proved in his lecture "The Application of Solubility Method in the Investigation of the Solubility of Complex Compounds" the possibility of using data on the isotope exchange to clarify the structure of the complex and mechanism of the hydration processes. V. Kiselev mentioned in his lecture the use of radioactive isotopes in the study of the stability of complexes in non-aqueous solutions. A. V. Zaitsev, V. I. Zaitsev, V. I. Zaitsev and A. M. Golub took part in the discussion of the lecture. The usefulness of applying the theory of the crystalline fields in explaining the results obtained from the absorption spectra of the com-

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Conference Discussion on the Methods of
Investigating the Complex Formation in Solutions

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Conference Discussion on the Methods of
Investigating the Complex Formation in Solutions

201/153-58-5-10/20

stability of the 'pyridinate' is changed in dependence on the solvent. Ya. I. Fur'yan in his lecture "The Influence of the Solvent Upon the Composition and Stability of Complexes" discussed the polarographic investigation method of the chloride and thiocyanate complexes of lead in aqueous ethanol solutions at different content of the non-aqueous solvent and at a constant ionic strength. A step-wise character of the complex formation was found as well as the instability constants of the complexes. The influence of the dielectric constant of the solution on the stability of the investigated complexes was proved. In the lecture by V. P. Pavlyuk on the "Investigation of Aqueous Complexes in the Solvent Ethanol" the main attention was devoted to the necessity of the dilution of the solutions in the investigation of the complex formation. The applicability of the polarographic method in the determination of the composition and stability of the aqueous complexes in mixed solvents was proved and experimental material on the thermodynamics of the dissociation of the cadmium-aqueous complexes in aqueous ethanol solutions was mentioned. V. E. Tolmachev, V. I. Danilov

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and I. V. Yanagovskiy stressed in their lectures the necessity of a more complete and general investigation of the solvation processes. A. E. Babko and A. E. Golub pointed out the great importance of the investigations of the complex formation equilibria in non-aqueous solutions, and made several critical comments on the lecture by Ya. I. Fur'yan. The following scientists took part in this discussion: L. P. Kiselevich, G. I. Kutyayevskiy, A. P. Melevin and A. G. Shchegolev. At the final meeting of the conference A. A. Brikman, corresponding member, AS USSR, said in his speech that the conference was very useful. A detailed discussion of the determination methods of the composition of the complexes, as well as of the study of the thermodynamics of the complex formation, was extremely useful for all who attended this conference.

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201/153-58-5-10/20

AUTHOR: Krupatkin, I. L. 79-28-3-56/61

TITLE: Investigation of the Continuous Transitions From Stable to Metastable Separation of Layers (Issledovaniye nepreryvnykh perekhodov stabil'nogo rasslaivaniya v metastabil'noye)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp. 823-829 (USSR)

ABSTRACT: The transformation of stable separation of layers to the metastable state can be of practical interest as a process which makes it possible to obtain the fusion of two and three bodies within the whole concentration interval of the binary- and tertiary system formed by them. It is shown that this transition in the ternary system takes place above the intersection and above the point of contact of the fusibility- and separation- of-layer curves. As a whole, different types of continuous mutual transitions of metastable and stable separation of layers of binary and tertiary systems are investigated. They consist of four basic types represented in the figures. The fourth type represented in figure d () has not been found until now. This to find is the aim of the

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present work. In the binary system salicylic acid-phenol investigated with a view to its fusibility, a chemical reaction of the components was not found. The separation of layers of the two tertiary systems salicylic acid-phenol-water and anthranilic acid-phenol-water was investigated. It was found that in both cases the volume of the separation of layers of the ternary system binds the surfaces of the separation of layers of the two binary systems formed by water, and that it has a point of inflection. The cause of the formation of such types of diagrams of ternary systems was explained. It is shown that in both investigated ternary systems one of the types of continuous mutual transitions of metastable and stable separation of layers of binary systems is realized in which the mentioned transition through the point of inflection takes place. There are 6 figures, 3 tables, and 10 references, 8 of which are Soviet.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut
(Yaroslavl' Technological Institute)
SUBMITTED: January 12, 1957
AVAILABLE: Library of Congress
Card 2/2

AUTHOR: Krupatkin, I. L.

79-28-4-57/60

TITLE: ~~On the Establishment of Equilibrium Between 3 Liquid Phases~~
in Ternary Systems (O vzniknovenii ravnovesiya trekh
zhiukikh faz v troynykh sistemakh)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 4,
pp. 1108-1112 (USSR)

ABSTRACT: In recent time stable equilibrium was found between 3 liquid phases in ternary systems which are formed of binary systems with stable phase separation. It was also shown that also in ternary system which contains binary systems with metastable phase separation equilibrium can be established between 3 liquid phases (Ref. 1). Here also the equilibrium was metastable and was established according to the same scheme as the stable phase separation. Stable equilibrium between 3 liquid phases in a ternary system which contains one or more binary systems with metastable phase separation were not yet investigated. The research of this type of equilibrium and of the scheme of its formation was the object of the present paper. The binary system anthranilic acid -

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On the Establishment of Equilibrium Between 3
Liquid Phases in Ternary Systems

79-28-4-57/60

benzene was investigated as well; it pertains to the system with metastable phase separation. The system water - benzene belongs to the systems with stable phase separation with an upper critical point which is to a great extent positive (Ref.1). The system water - anthranilic acid was investigated with respect to the phase separation. The curve of the metastable phase separation has a lower critical point at 70°C which corresponds to 38% of anthranilic acid. Thus the ternary system used contains 2 binary systems with metastable and one system with stable phase separation. The system anthranilic acid - benzene was investigated by means of the melting point curve. The crystallization curve is s-shaped and very steep; the form of the curve is due to the existence of a curve for metastable phase separation. This curve lies, however, at such low temperature that they cannot be found experimentally. Their existence can, however, be detected indirectly. It is shown that this system belongs to the systems with metastable phase separation and a very low critical point. The ternary system anthranilic acid - water - benzene was investigated by means of the phase separation. It was found that the reciprocal solubility of two liquid phases of this system depends only to a little ex-

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On the Establishment of Equilibrium Between 3 Liquid
Phases in Ternary Systems

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tent on temperature. On the strength of these investigations it was found that this system has a domain of stable equilibrium between 3 liquid phases which lies at temperatures below 124°C (temperature of the critical conode). Temperature-concentration limits of the region of the three-phase liquid equilibrium and the compositions of the coexisting solutions of the critical conode were found. Furthermore it was shown that the scheme of the polythermal line of the occurrence and the development of a stable equilibrium between the three liquid phases ⁱⁿ ternary systems which contain binary systems with stable and metastable phase separation is one and the same.

There are 3 figures, 2 tables and 4 references, 3 of which are Soviet.

ASSOCIATION: Yaroslavskiy tekhnologicheskii institut (Yaroslavskiy Technological Institute)

SUBMITTED: March 18, 1957

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5 (4)

AUTHOR: Krupatkin, I. L.

SOV/79-29-8-7/81

TITLE: Employment of the Method of Two Solvents for an Investigation of the Formation and Properties of Organic Complexes

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2490 - 2495 (USSR)

ABSTRACT: This theoretically founded method (Refs 1-4) is at present being used - among other applications - for the investigation of the chemical reaction in liquid systems; in addition, it takes the effect of the medium into account. The above method has hitherto been used but rarely for the investigation of systems in which two complexes occur. To close this gap, the two binary systems "chloral hydrate - antipyrine" and "pyramidon - salicylic acid", previously investigated only in the polar solvent water (Refs 5,6), are investigated here in the homopolar solvent benzene. By V. P. Alekseyev's method (Ref 7) it was investigated how far the system "chloral hydrate - benzene" can be separated into layers; it belongs to the systems with an upper critical point (Fig 1). The system pyramidon - benzene was investigated with respect to fusibility; it is one of the systems with latent separation into layers (Fig 2). In

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Organic Complexes

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this connection two complexes of the predominant system appear in the isothermal lines of the ternary system "chloral hydrate antipyrine - benzine" (Fig 3). A complex of the predominant system with the solubility minima, the upper ternary critical point, and a break in the critical line appears in the isothermal lines of the ternary system "pyramidon - salicylic acid - benzine" (Fig 9). A region of separation into layers is visible in all three homogeneous binary systems within this ternary system, a phenomenon which is illustrated in more detail in the report. It was shown that in the investigation of the complex formation in organic compounds with two complexes the above method is reliable. It permits detection of all complexes of the system, and determination of their composition and a series of properties. It was further shown that of two complexes that complex is most stable which contains a larger quantity of the component of the reacting system which reacts more weakly with the third component - the solvent. There are

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4 figures, 2 tables, and 11 references, 10 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskii institut (Ivanovo Institute of Chemical Technology)

SUBMITTED: June 3, 1958

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KHUPATKIN, I.L.

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1. Ivanovskiy khimiko-tekhnologicheskii institut.
(Phase rule and equilibrium)

KRUPATKIN, I.L.

Priority of D.N. Abashev in the discovery of the isothermal
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(Liquids) (Solubility)

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Demixing ternary systems with three components. Part 1.
prevailing system is irrational. Zhur. ob. khim. 34. 5.
1977-1980. By '04. 1977.

1. Ivanovskiy khimiko-tekhnologicheskii institut.

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[The leading role of socialist industry in the development of Soviet
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VOL'FOVSKIY, G.M.; KRUPATKINA, E.K.; IVANOV, A.I.

Regulation of PVR ovens equipped with separate regenerators in the
course of heating with coke gas. Koks i khim. no.11:25-29 '60.
(MIRA 13:11)

1. Koksokhimstantsiya.

(Coke ovens)

KRUPAUER, KAMIL

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and
Their Application - Ceramics, Glass, Binders,
Concrete.

H-13

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, 8752

Author : Krupauer Kamil

Inst : -

Title : Compression Strength and Thermal Stability of Sight
Glasses.

Orig Pub : Sklar a keramik, 1957, 7, No 4, 112-113

Abstract : A study was made of the compression strength depending
upon the ratio of thickness of the glass to its diameter.
For this purpose use was made of round sight glasses
ground on both sides and made from cast glass having the
following composition (in % by weight): SiO_2 73.72,
 Al_2O_3 0.83, Fe_2O_3 0.035, CaO 6.4, MgO 0.04, $\text{Na}_2\text{O} + \text{K}_2\text{O}$
18.02, SO_3 0.22, Cl 0.1, As_2O_3 0.6. Thickness of the

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CZECHOSLOVAKIA/Chemical Technology - Chemical Products and
Their Application - Ceramics, Glass, Binders,
Concrete.

H-13

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, 8752

glasses was 8-20 mm. Only those glasses were selected for
testing which were free from waviness and showed a uniform
distribution of stresses up to a value of about 90 m/cm.
For determination of thermal stability 10 glasses were used
having a thickness of 12-14 mm. All the glasses without
exception failed to withstand temperature differences in
excess of $45 \pm 5^\circ$. Sight glasses can successfully per-
form their functions at temperature differences not over
 $30-35^\circ$, internal stresses up to 90 m/cm and thickness of
10-15 mm. At the same time one must take into account the
necessity of a two- to three-fold strength safety factor,
including such elements as, for example, uneven fastening,
material fatigue following prolonged strain, etc. Sight
glasses must be made from glass material which ensures

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